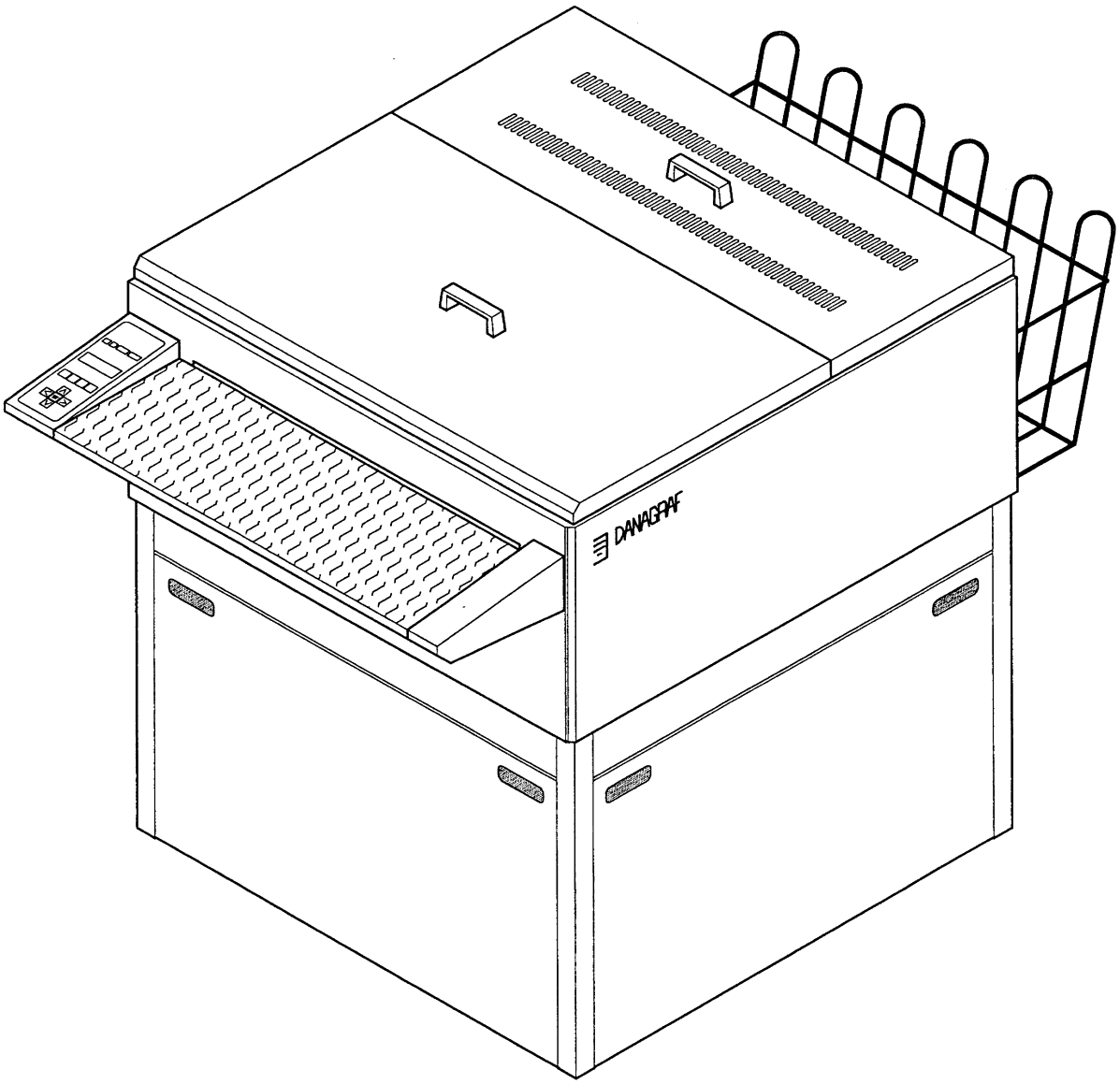
USER MANUAL



DG 3820

1:12,5 961106 / JOA DG6212-00B

(THIS PAGE IS NOT IN USE)

NOTICE

All statements, technical information and recommendations contained herein are based on tests, we believe to be reliable, but accuracy of completeness thereof is not guarantied and the following is made in lieu of all warranties, expressed or implied:

Before using, user shall determine the suitability of the product for his intended use, and user assumes all risks and liability, whatsoever in connection therewith.

The processor is, to the best of our knowledge, suitable to work with all types of chemistries known to the graphic market.

No statement or recommendation not contained herein, shall have any force or effect in any agreement signed by officers of sellers and manufacturer.

Sincerely Yours.

DANAGRAF A/S.

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INTRODUCTION

This Graphic Film Processors is equipped with the revolutionary “Tip- Touch” control panel. This feature, presented as a built-in control pad, enables even the unskilled operator to perform all processor settings in a logic way, with visual control of all data input. At any time the operator can check the status of the chemistry, temperatures, processing speed, etc.

The ergonomic design, working height, accessibility and multitude of features will economise your operating, as well as your maintenance time and guarantee a high standard of reliability.

The user of this Graphic Processors will be able, with help of this selfexplaining manual, to operate the unit to its full extend and produce quality output from the beginning.

GOOD LUCK!

TECHNICAL DATA

FOR PROCESSOR DG 3820

Height including stand	1090 mm / 42.9”
Width	1220 mm / 47.2”
Length	1610 mm / 63.3”
Weight,	235 Kg / 518.2 lbs.
Power Supply	220V 50/60Hz
Power consumption total	3550 W
Max. film width	950 mm / 37.4”
Min. film width	150 mm / 5.9”
Min. film length	150 mm / 5.9”
Developing time	20 - 99 sec.

Internal clock
9 User + 1 Night Program

Automatic water solenoid for water saving
Automatic water re-circulating unit (optional)
Automatic air cleaning unit (optional)
Automatic On / Off function

Automatic replenishment	0 - 1995 mL

Anti-oxidation programs

Tank capacity dev. / fix. / water	29 L / 7.9 US Gal.
Circulation dev. / fix. / water	15 L / 4.1 US Gal.
Adjustable temp. dev. / fix.	15 - 45^{0}C / 59 - 113^{0}F
Adjustable temp. dryer	30 - 60^{0}C / 86 - 140^{0}F

Daylight developing and Rewash Slot

Counter for hours of operation	hr
Counter for amount of film processed	m^2
Counter for amount of replenishment	L

Filter replacement warning dev. / water / air
Motor overload warning

Water connection	3/4”
Working range: 10 - 45^{0}C (50 - 113^{0}F)	*30- 90% humidity*

GENERAL DESCRIPTION

The processor can be in one of the following modes:

1) **“OFF”** Processor is powered. For startup push the “ON” button. (With Main supply ON)

2) **“ON”** Processor can be in “READY MODE”, “NIGHT MODE” or ”WARMING UP”

3) **“OFF”** Processor is not powered, when the “Emergency Stop” is activated or the Main supply is OFF. The internal clock runs on a battery.

Darkroom:

As soon as film/paper is detected by one or more of the sensors, the processor will start running and the dryer section will be activated. Replenishment will take place in relation to the chosen amount per sq.mtr/ft, depending on number of activated sensors.
After the material leaves the sensors, the processor has to run “X” minutes and seconds. After completion of this running time, the processor will resume “READY MODE” and maintain bath temperatures. A new film can be entered approx. 5 sec. after the trailing edge has left the sensor.

Daylight: (only installed on request)

Entering a film through the “Daylight” slot, starts the same sequence as the “Darkroom” mode, but the amount of replenishment is equal to one sensor activated.

Rewash: (only installed on request)

Entering a film/paper through the “Rewash” slot, starts the same sequence as the “Darkroom” mode, but without replenishment.

No input:

The “NO INPUT” on the Control Panel will be lit 5 sec. after the film/paper has left the “Darkroom” entry. This also applies when using the “Daylight” or “Rewash” slots.

Ready mode:

In the “READY” mode the processor maintains operational tempera ture and the exhaust fan will run as soon as the processor is powered up. Whenever the chemistry is warming up, the circulation pumps will be running. Replenishment takes place according to settings.

Night Prog:

The processor will maintain the chosen temperatures in developer and fixer bath. The “ANTI OX” program will maintain the chemistry balance and turn the rollers to avoid crystallization, according to setting.

NOTE: Film or paper input is not possible in this program.

Week Prog:

Start and shut-down times for each day of the week are programmable, together with the “Night Program” settings.

Time:

The built-in clock shows time, day, date, month and year. Setting and adjustment is possible. Runs on a battery during power failure.

Status:

This menu shows:	Total operation time	
	Square meter of processed material	(2)
	Amount of Developer replenish used	(3)
	Amount of Fixer replenish used	(4)

Position 2, 3, and 4 can be reset.

Levels:

The developer, fixer and water tanks have individual level control. If the “NO INPUT” indicators begin to flash, the dev. and the fix. tanks will automatically be refilled. The pumps will work for max. 40 sec. to minimize damage in case of a leakage. You can also press the “MAN. REP L.” button and the pump (s) will pump as long as it is activated, in order to restore correct level. In case of low level the heater and the circulation pump will automatically stop to prevent overheating.

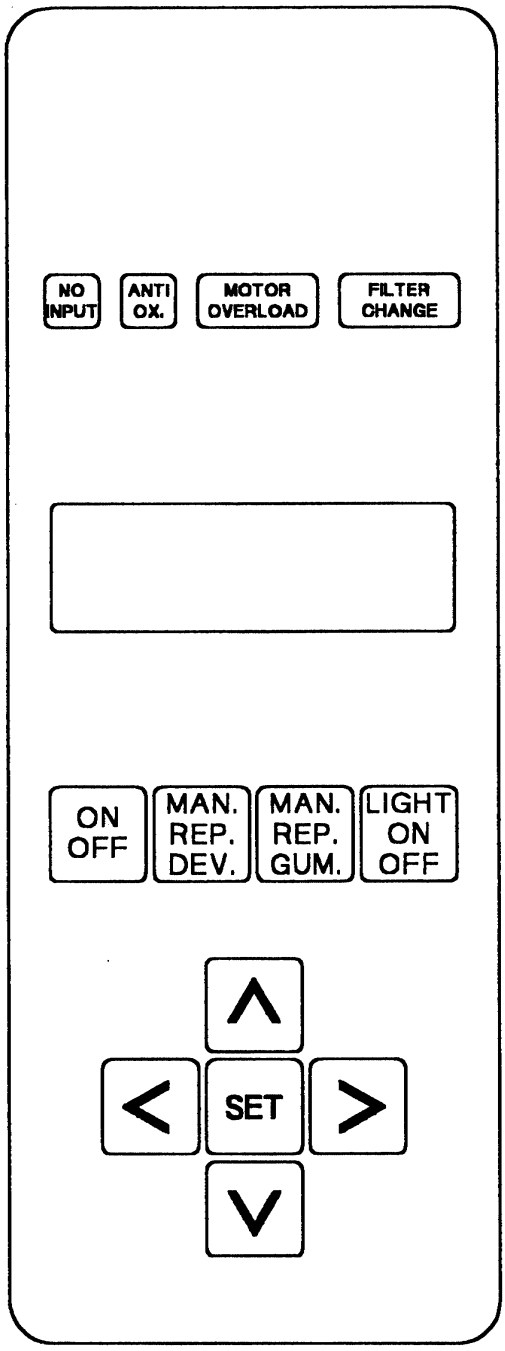
Online mode:

See ONLINE appendix.

CONTROL PANEL

The Processor is equipped with a “Tip-Touch” control panel which ease the users control of the Process.

The panel is designed to offer the user the best possible control, giving a very comprehensive data read-out, without being to complex.



“NO INPUT”

The "NO INPUT" indicator Is lit whenever the status of the processor is not normal. The status Is not normal when:
- Temperature it; too low in Dev / Fix
- Temperature is too high in Dev / Fix
- "LOW LEVEL" in any tank
- Processor Is In "PROCESS MODE", either through Darkroom, Daylight or Rewash feeding.

NOTE: For "Through the Wall" installation the processor is equipped with a red indicator light on the exit side , Indicating a "NO INPUT" status.

“ANTI OX.”

This is lit whenever the "ANTI OX" program is active. This can be programmed individually, to give an amount of replenish of Developer and Fixer from 0 - 99 ml, at any set time interval from 5 - 60 min. The rollers also turn, to prevent crystallization and will run for minimum 5 sec. If the processor is in "READY MODE", but has not been used for a longer time, the "ANTI OX" program will automatically work, depending on the setting.

“MOTOR OVERLOAD”

This is lit, if an abnormal high load Is on the motor. E.g. in case of a film jam, Then you must turn "OFF" the processor on the panel, remove the cause and turn it "ON" again.

“FILTER CHANGE”

When this is lit, one of the following filters needs to be changed:
- Water filter (optional external unit)
- Air Cleaner filter (optional external unit)

For details, go to the chapter "Maintenance"

“DISPLAY”

This is a LCD display, with a possibility of 4 lines of information at a time, of all the "MENU"s and "PROGRAM"s.

“ON / OFF”

With this you can turn the processor "ON" or "OFF" manually, if you do not use the programmable TIMER for automatic "ON / OFF" function.

“MAN. REP. DEVO”

This enables you, manually to pump up more developer, in case of ”LOW LEVEL”, after chemistry change, or if the automatic setting has been to low for refreshing the developer.

“MAN. REP. FIX.”

This enables you, manually to pump up more fixer, in case of “LOW LEVEL”, after chemistry change, or if the automatic setting has been to low for refreshing the fixer.

“LIGHT ON / OFF”

Here you can turn OFF the light in the DISPLAY, if developing red light sensitive materials.

>	To enter (open) a program.
<	To exit a program.
^	To bring cursor up, or to **increase** value in any program, when it has been opened.
v	To bring cursor down, or to **decrease** value in any program, when it has been opened.
SET	To enter (confirm) setting.

PREPARATIONS

After the processor has been installed by a qualified technician, you can prepare to fill up the tanks with chemistry and water.

NOTE: Always follow the instructions given by the film and chemistry manufacturer.

Fixer:

It is strongly recommended to put the fixer into the tank, before the developer, in order to prevent splashing into the developer tank. This will cause contamination of the developer and result in a poor developing process.
The fixer tank is the center tank, marked with blue.

Developer:

Before filling the developer into the dev. tank, check and make sure that no splashing has occurred, when filling the fixer tank. If so clean thoroughly. The dev. tank is marked with red.
NOTE: Make sure that the valve on top of the Developer filter (if installed) is in the ”OPEN” position, before you fill the tanks and turn on the machine.

Water:

If the processor is connected to a water-pipe, turn it on. No water will come into the tank, before the processor is turned “ON”, because there is a built-in electric valve, which only opens in case of “LOW LEVEL” or when in “PROCESS” mode. This reduces water consumption.

Replenishment:

Mix some additional Developer and Fixer in separate containers. Place these under the processor and insert the 1/2” red hose into the Developer and the 1/2” blue hose into the Fixer container.

Now you can turn the processor ON” and set up the programs, according to your needs.

Press the “MAN. REP. DEV.” and “MAN. REP. FIX.” buttons for a few seconds, to make sure chemistry is pumped up through the system.

CREATING PROGRAMS

Choosing a program

[>]	To enter (open) a program.
[<]	To exit a program.
[∧]	To bring cursor up, or to **increase** value in any program, when it has been opened.
[∨]	To bring cursor down, or to **decrease** value in any program, when it has been opened.
[SET]	To enter (confirm) setting.

SYMBOLS IN THE DISPLAY:
" + " Means you can move the cursor up or down, from one program to the other.
" – " Means you can enter a program and change values.

When the processor has been turned "ON" on the Control Panel, you will find following in the Display:

MAIN MENU
D:30 (dev. temp.) F:30 (fix. temp.) S:30 (speed)
READY or DEV.TEMP. : (if dev.temp) LOW or HIGH
PROGRAM : + 1

Press [>] : - will appear

Press [∧] or [∨] to choose Program number e.g. to open Program No 1

Press: [>] to open Program No 1

Following Menu will appear:

PROGRAM NO	:	1	(1 - 9 + NIGHT)
DEV. TEMP.	:+	30^{0}C	(15 - 45^{0}C / 59 -113^{0}F)
FIX. TEMP.	:	30^{0}C	(15 - 45^{0}C / 59 -113^{0}F)
DEV. TIME	:	30 SEC	(20 - 99 sec.)
DRY TEMP.	:	53^{0}C	(30 - 60^{0}C / 86 -140^{0}F)
DEV.REPL	:	400 ml / m^2	(0 - 1995 ml / m^2)
FIX. REPL	:	300 ml / m^2	(0 - 1995 ml / m^2)
AOX.DELAY	:	60 min.	(5 - 60 min.)
AOX. DEV.	:	50 ml	(0 - 99 ml)
AOX. FIX.	:	30 ml	(0 - 99 ml)

NOTE: There are 10 different factors in each program that can be set individual to have and maintain a perfect balance in the chemistry.

Developer temperature setting:

Press [>] to open DEV. TEMP. setting, : - will appear

Press [∧] or [∨] to correct temperature

Press [SET] to enter (confirm) setting.

Fixer temperature setting:

Press [∨] to bring cursor from the DEV. TEMP. to FIX. TEMP. menu.

Press [>] to open FIX. TEMP. setting, : - will appear

Press [∧] or [∨] to correct temperature

Press [SET] to enter (confirm) setting.

Developing time setting:

Press [∨] to bring cursor from DRY TEMP. menu, to DEV. TIME menu.

Press [>] to open DEV. TIME setting, : - will appear

Press [∧] or [∨] to correct time

Press [SET] to enter (confirm) setting.

Dryer temperature setting:

Press [∨] to bring cursor from the DEV. TIME menu, to DRY TEMP. menu

Press [>] to open DRY TEMP. setting, : - will appear

Press [∧] or [∨] to correct temperature

Press [SET] to enter (confirm) setting.

Developer replenishment:

Press [V] to bring cursor from DEV. TIME menu to DEV. REPL. menu.

Press [>] to open DEV. REPL. setting, : - will appear

Press [^] or [V] to correct amount

Press [SET] to enter (confirm) setting.

Fixer replenishment:

Press [V] to bring cursor from the DEV. REPL. to FIX. REPL. menu.

Press [>] to open FIX. REPL. setting, : - will appear

Press [^] or [V] to correct amount

Press [SET] to enter (confirm) setting.

Anti-oxidation delay:

Press [V] to bring cursor from FIX. REPL. menu, to AOX. DELAY menu

Press [>] to open AOX. DELAY. setting, : - will appear

Press [^] or [V] to correct time

Press [SET] to enter (confirm) setting.

Anti-oxidation Day. repl.:

Press [V] to bring cursor from the AOX. DELAY, to AOX. DEV. menu

Press [>] to open AOX DEV. setting, : - will appear

Press [^] or [V] to correct amount

Press [SET] to enter (confirm) setting.

Anti-oxidation Fix, repl.:

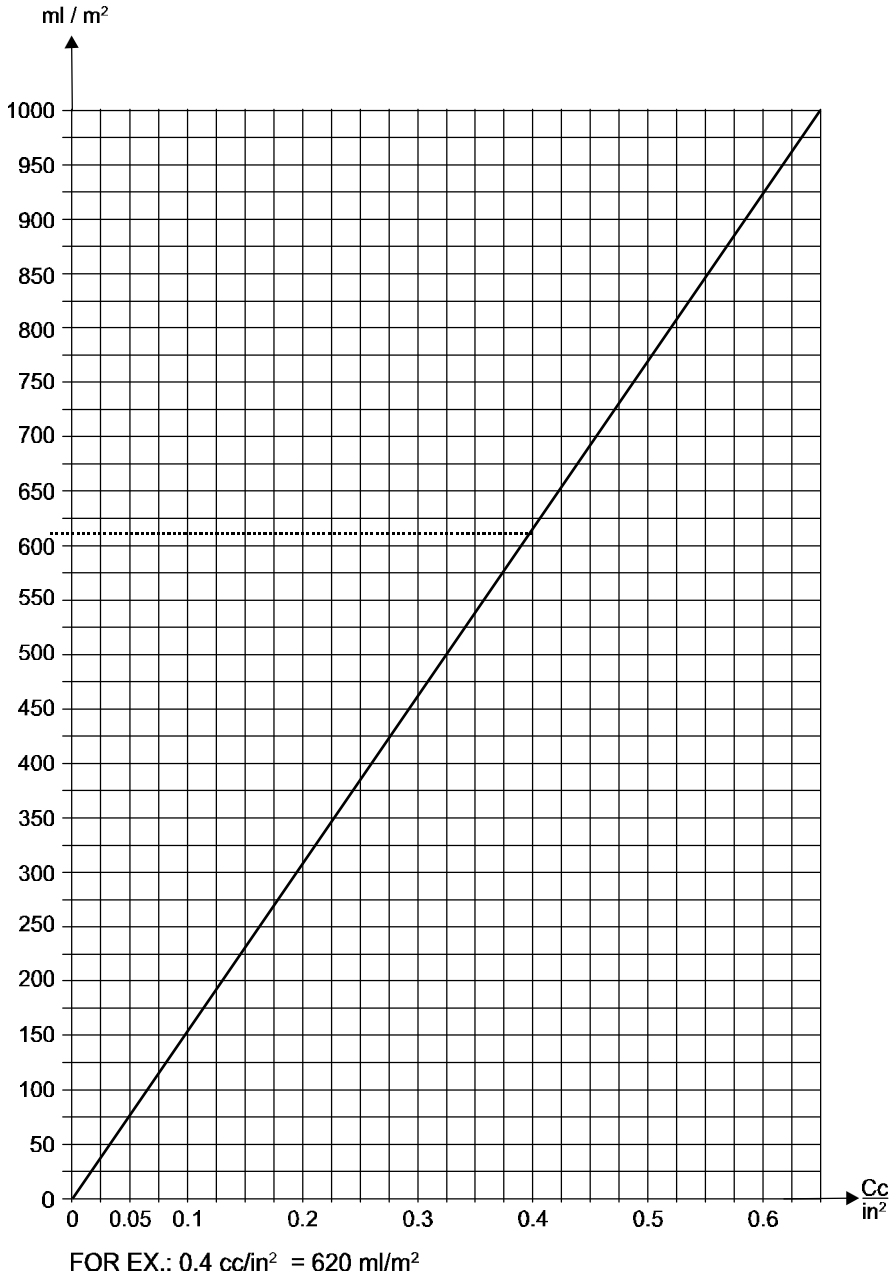
Press [V] to bring cursor from the AOX. DEV, to AOX. FIX. menu

Press [>] to open AOX FIX. setting, : - will appear

Press [Λ] or [V] to correct amount

Press [SET] to enter (confirm) setting,

For converting between cc/sq.in - ml/m^2



WEEK PROGRAMS:

You have the possibility to program the processor to turn ON and OFF, at a set time, any day of the week.
Note: If you use these programs, you must program the NIGHT PROGRAM, in order to make these function.

Press [<] to make sure that you are out of the programs.

Press [∧] or [∨] to the WEEK PROGRAM menu

Press [>] : - will appear

Press [∧] or [∨] to the correct day, e.g. MONDAY

Press [>] to open MONDAY setting

MONDAY

PROGRAM NO	: +	0
START HOUR	:	08
MIN	:	00
STOP HOUR	:	17
MIN	:	00

Press [>] to open PROGRAM NO setting : - will appear

Press [∧] or [∨] to choose PROGRAM NO e.g. 1

Press [SET] to enter (confirm) setting :+ will appear

Press [∨] to bring cursor from PROGRAM NO to START HOUR menu

Press [>] to open START HOUR setting, : - will appear

Press [∧] or [∨] to correct hour

Press [SET] to enter (confirm) setting.

Press [V] to bring cursor from START HOUR to START MIN, menu

Press [>] to open START MIN. setting, : - will appear

Press [^] or [V] to correct MINUTES

Press [SET] to enter (confirm) setting.

Press [V] to bring cursor from the START MIN. to STOP HOUR menu

Press [>] to open STOP HOUR setting, : - will appear

Press [^] or [V] to correct HOUR

Press [SET] to enter (confirm) setting.

Press [V] to bring cursor from the START MIN. to STOP HOUR menu

Press [>] to open STOP HOUR setting, : - will appear

Press [^] or [V] to correct HOUR

Press [SET] to enter (confirm) setting.

Use the same procedure for the rest of the days of the week. After this you must program the NIGHT PROGRAM.

Note: If you do not want the processor to turn "ON" on e.g. Sundays, just enter too" in the "PROGRAM NO" under the "SUNDAY" menu.

NIGHT PROGRAM:

This program along with the Week Program, will enable you to cut down waiting for the warming up time and by decreasing the temperature in the tanks. during the night, will result in energy savings.

To set the NIGHT PROGRAM go to the PROGRAM NO menu

Press [∧] or [∨] to the PROGRAM NO menu

Press [>] to open PROGRAM NO setting : - will appear

Press [∨] to bring cursor to NIGHT PROGRAM

Press [>] to open NIGHT PROGRAM

Following will appear in the Display

PROGRAM NO	: +	NIGHT
DEV. TEMP	:	20 ^{0}C
FIX. TEMP	:	20 ^{0}C
AOX DELAY	:	60 MIN
AOX DEV.	:	20 mL
AOX FIX.	:	20 mL

Press [∨] to bring cursor from DEV. TEMP menu

Press [>] to open DEV. TEMP setting, : - will appear

Press [∧] or [∨] to correct NIGHT DEV. TEMP

Press [SET] to enter (confirm) setting.

Use same procedure to set the other parameters.

Note: If you use the automatic ON / OFF function. Do not turn OFF the MAIN POWER switch.

TIME ADJUSTMENT:

The built-in clock shows, time, day, date, month and year. To adjust use the following procedure:

Press [∧] or [∨] to the TIME menu

Press [>] : - TIME will appear

Press [∨] : - ADJUST will appear

Press [>] to open ADJUST menu

Following will appear in the Display:

ADJUST TIME		
YEAR	: +	xx
MONTH	:	xx
DAY	:	xx
DATE	:	xx
HOUR	:	xx
MINUTES	:	xx

Press [>] to open ADJUST YEAR setting, : - will appear

Press [∧] or [∨] to correct YEAR

Press [SET] to enter (confirm) setting.

Press [∨] to bring cursor from YEAR to MONTH menu

Press [>] to open ADJUST MONTH setting, : - will appear

Press [∧] or [∨] to correct MONTH

Press [SET] to enter (confirm) setting.

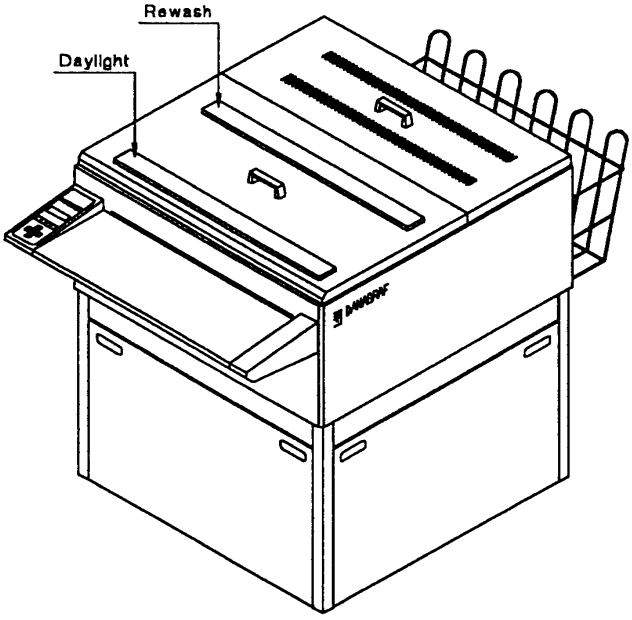
Use the same procedure to program the remaining parameters.

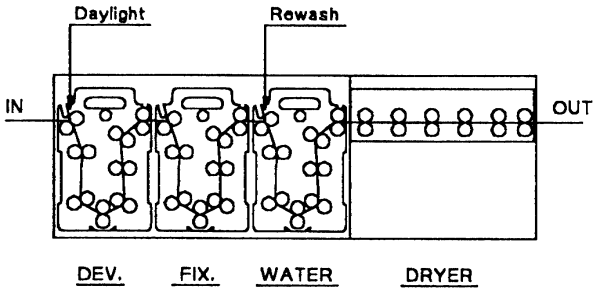
NOTE: The clock Is a 24 hour clock, according to international standard,
00:00 -- 11:69 = a.m.
12:00 -- 23:69 = p.m.

DAYLIGHT DEVELOPING (NOT INSTALLED)

On top of the processor there is a slot for developing daylight film. This is especially practical, if you have a two room (through the wall) installation. This way you can develop film without entering the darkroom.
Open the lid of the daylight slot and insert film. The ”NO INPUT” lamps on the Control Panel and on the exit side will turn ON. Close the lid as soon as the film has entered completely.
When using the daylight slot the amount of replensihment will be equal to the amount of one sensor activated.

(DAYLIGHT AND REWASH IS NOT INSTALLED ON DG 3820)





WASH SECTION

The wash section is intended to remove any excessive chemistry from the film paper, before it enters the dryer.
The water should normally be connected to an In-house water-pipe, with natural pressure. There is a built-in restrictor in the electrical water solenoid, to ensure the correct amount of water circulation.
The water tank can also be connected to an external water cleaning unit. which cleans and circulates the water. This will save a lot of water and ensure, that the water going to the drain is perfectly clean, to comply to local laws and regulations.

Rewash: (NOT INSTALLED ON DG 3820)

On top of the processor you have a Rewash Slot in case you wish to rewash and dry any kind of film or photopaper. Just open the lid and insert the film into the slot and the processor will start. In the “REWASH” mode no additional replenishment of developer and fixer will take place. Close the lid when the film has entered and the processor will go back to the normal “READY” mode, as soon as the trailing edge of the film has entered the dryer section and the “NO INPUT” lamp on the Control Panel will turn off.
The “NO INPUT” lamp on the exit side will go off shortly after the film has come out of the dryer.

(THIS PAGE IS NOT IN USE)

STATUS PROGRAM

In this program you can check the total running time of the processor, the amount of developed film and the amount of used developer and fixer for replenishment.

Press [Λ] or [V] to the STATUS menu

Press [>] to open the STATUS menu

Following will appear in the Display:

STATUS		
POWER ON	: +	XXX HR
FILM	:	XXX M
DEV REPL	:	XXX L
FIX REPL	:	XXX L

Parameters 2, 3 and 4 can be reset to zero, when you change chemistry.

Press [Λ] to bring cursor to RESET

Press [>] to open ARE YOU SURE ? (->) will appear

Press [>] to reset values.

TOOLS MENU

This sub menu utilizes a few tools, which might be needful. The menu consist of the following:

Fill Dev : Low / Filling / Full

Fill Fix : Low / Filling / Full

Motor : Off / On

The statusline, the empty line above Fill Dev, will be filled with " + " when the motor is running. This makes it possible for service engineers to see whether the tacho sensor is working or not. When the motor is off, the line is left blank.

The Fill Dev and Fill Fix options, makes it possible for the user of the Processor to fill up the bath by using the replenish pumps. The message after the Fill Dev or Fill Fix tells you what state the Processor is in, Low, Filling or Full.

If you have a low level in either of the Dev or Fix baths, use the following procedure to fill up the bath automatically.

Press or to the "TOOLS" menu

Press :- TOOLS will appear

Now the following menu will appear

Fill Dev : Low/Full
Fill Fix : Low/Full
Motor : Off

If either of the Dev or Fix is Low, the following procedure will apply.

Press or to the menu showing Low.

Press to open menu.

Now the Processor will start filling up the chosen bath. When the level has been corrected, the replenishpumps will stop.

Press to stop the filling and to exit to the Main menu.

If you have a Film Jam, you can use the Motor menu to drive out the material. However, this feature should only be used when the no material is stuck around any of the rollers. To use this feature, use the same procedure as above described.

MAINTENANCE

Routine cleaning:

The most effective way to avoid operating difficulties is to regularly clean the processor, its hoses and the replenishment pumps.

Chemistry is subject to oxidisation and even though the machine has its own program to eliminate this problem, the operator should pay special attention to preserving the chemistry and removing crystallized deposits from the equipment.

The use of floating lids on the replenishment containers to keep out the air can help a great deal to preserve the chemistry which will also give better results and create fewer problems.

The following suggestions are simple, but extremely necessary. They will help enormously to avoid spoiled work, wasted time, lost tempers and unnecessary expense.

NOTE: When you remove the top cover, the processor can not run (for your safety). Be careful, always to mount the various parts in the correct position after cleaning.

Every day:

Clean the film feed table and the lightproof compartment.

Use separate damp cloths to clean guides and each set of upper rollers.

Feed one or two old films before commencing the days work.

Every week:

(in addition to above)

Turn OFF the processor and remove all three roller racks. Clean them carefully with lukewarm water, using separate cloths for each rack.

NOTE: Racks can be removed and refitted without draining out the chemicals, but once again, it is essential to make sure that not one drop of fixer goes Into the developer bath. If this happens, the developer must be drained and the bath must then be thoroughly cleaned and refilled.

Occasionally:
(in addition to above)

Drain all three baths and empty the replenishment containers.

Fill the baths and replenishment containers with water and ensure that the racks, baths, hoses and containers are thoroughly washed by flushing and pumping water through each bath / system. After refilling the baths, repeatedly press the manual replenishment buttons for the developer and fixer to eliminate any air pockets in the system.

TROUBLE SHOOTING

General quality control statement

If there is a reduction in the quality of the processed materials, it can probably be solved by checking the control settings, the operational procedures, or by giving a little extra attention to the routine cleaning. A small amount of time invested in "SELF HELP" will usually avoid a lot of wasted time and possible expense which will result from calling in a service technician.

If, however, the problem seems to be electrical or mechanical, do not attempt such complex trouble shooting unless you are well qualified to do so.

Great care has been taken in the development, specification, and manufacture of this equipment to ensure that it will give many years of reliable performance and quality. It should therefore be expected that "REAL" technical problems will be rare and, if encountered, will involve the chemistry and materials, or the routine cleaning.

The following pages will provide answers to the most common problems that can be encountered when processing work.

Film quality hints and trouble shooting

Image is too dark:

A) If the material is film that has been exposed on a camera, make a new test exposure to check that the time being used suits the film being used (film is variable from package to package so check the emulsion references). Change exposure time if necessary.

B) Check the film manufacturer's recommended development time and reduce the time if necessary.

C) Check the chemistry manufacturer's recommended development temperature and reduce it if necessary.

D) Check the manufacturer's mixing instructions for the developer and replace the mixed solution if it is too strong.

E) Reduce developer replenishment setting for a while. If good results are restored, maintain a lower replenishment rate.

Image is too light:

A) Check level of developer bath and manually replenish if necessary. Consider increasing the replenishment rate. Also ensure that the replenishment container is not empty and that the hose is not bend or blocked.

B) If the material is film that has been exposed on a camera, make a new test exposure to check that the time being used suits the film being used (film is variable from package to package so check the emulsion references). Check that the camera lamps are all O.K. Increase exposure time if necessary.

C) Check the film manufacturers recommended development time and increase the time if necessary.

D) Check the chemical manufacturer's recommended development temperature and increase it if necessary.

E) Investigate whether the developer has become oxidised (possibly through lack of use). If it has a strong brown colour, it should be replaced.

F) Check the manufacturer's mixing instructions for the developer and replace the mixed solution if it is too weak.

G) Consider the possibility that the developer has been contaminated with fixer solution. If so, it is necessary to drain out the bath and wash it thoroughly. Take whatever action is necessary to eliminate the reason for the contamination before refilling the bath With the new chemistry solution (the machine must stand level and steady at all times).

H) Flush out the developer replenishment system using the manual replenishment button (7) to pump warm water from a container. Follow the instructions in the "CHEMISTRY PREPARATION" section of this manual when you are refilling the bath.

Film has a foggy appearance:

A) Check the chemistry manufacturers recommended development temperature and reduce it if necessary,

B) Consider the possibility that the developer has been contaminated with fixer solution. If so, it is necessary to drain out the bath and wash it thoroughly. Take whatever action is necessary to eliminate the reason for the contamination before refilling the bath with the new chemistry solution (the machine must stand level and steady at all times).

C) Investigate whether the problem occurred because the film was exposed in faulty conditions (non-lightproof).

Film has dual tone (dichroic) stains:

A) The fixer bath should be drained, washed out and refilled with a new chemistry solution. This problem is usually caused by excessive carry-over or spilling into the fixer bath.

Film has a milky appearance:

A) Check level of fixer bath and manually replenish if necessary.
Consider increasing the replenishment rate. Also ensure that the replenishment container is not empty and that the hose is not bend or blocked.

B) Check the chemistry manufacturer's recommended fixer temperature and reduce it if necessary.

C) Drain the fixer bath and then refill it with a new chemistry solution. Follow the manufacturer's mixing instructions carefully.

Film has stripes (lengthwise)

A) Remove and clean the crossover guides.

Film is scratched

A) Check that the crossover guides are fitted correctly and check for possible damage.

B) Inspect the dryer section and make sure that the assembly is correctly fitted and in good order. Clean all rollers in the dryer section.

C) Drain the fixer bath and refill with a new chemistry solution.

D) Drain the water bath and remove the roller rack. Wash the bath and clean the rack before reinstalling and refilling with clean water.

Film is sticky

A) Drain the fixer bath and refill with a new chemistry solution.

B) Drain the water bath and remove the roller rack. Wash the bath and clean the rack before reinstalling and refilling with clean water. Clean all rollers in the dryer section.

Film is not drying properly

A) Check temperature setting.

B) Check dryer blower setting.

C) Qualified investigation is necessary.

Film is jamming in one of the baths

A) Remove the roller rack and clean it thoroughly. Ensure that the rack and its rollers are in their correct locations and that the rollers are turning evenly and freely.

Film is jamming due to the crossover guide

A) Ensure that the roller racks are in their correct location and that the crossover guides are correctly fitted.

Phototypesetting paper is jamming

A) Be sure that the leading corners are folded back correctly (emulsion to emulsion) at a 45^0 angle or attach a piece of film as a leader.

B) Make the same investigations that are made for film.

Processor stops before film / paper exits

A) Qualified investigation is necessary.

ELECTRONIC INTERFACE TO TRANSPORTER (Buffer or Conveyor)

The communication from the Imagesetter trough Transporter (Buffer or Conveyor) Is normally two signals, Wait and Error.

The Danagraf electronic is prepared for this communication, and can be switch ON and OFF in the Service Program.

Wait signal indicate a smaller fault "not so critical" in the processor, it can be low level, to low / high temperature, maximum of film In process (3) or the Processor In OFF mode. If wait signal arise the Buffer (Imagesetter) shall wait until the Processor return to normal condition.

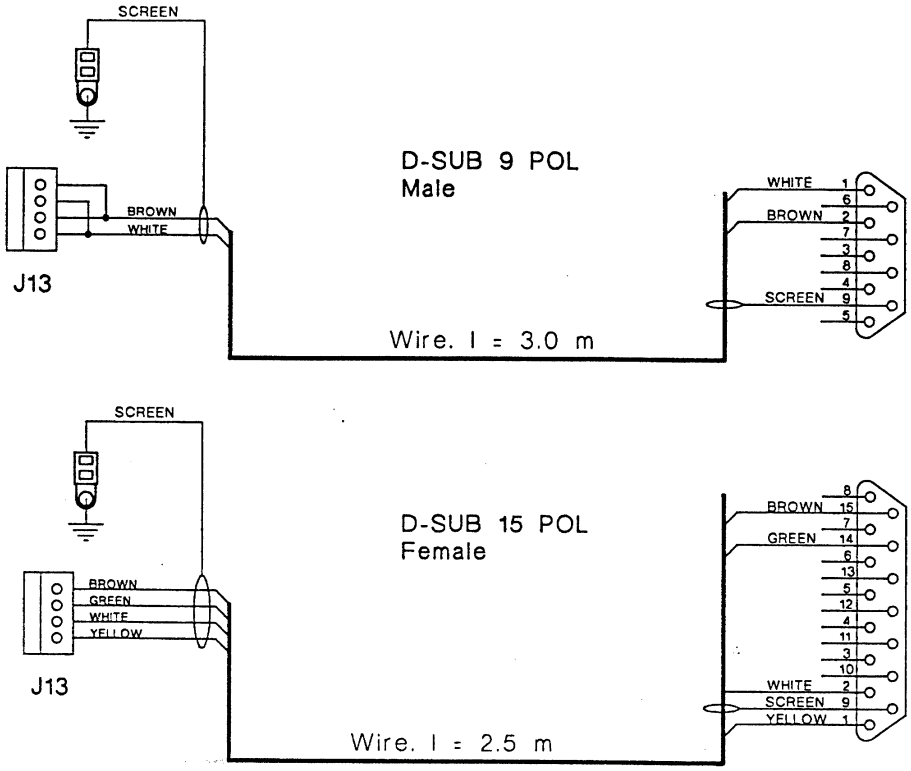
Maximum film in process (3) in the Danagraf electronic is for controlling how many film will be lost if a Jam arise.

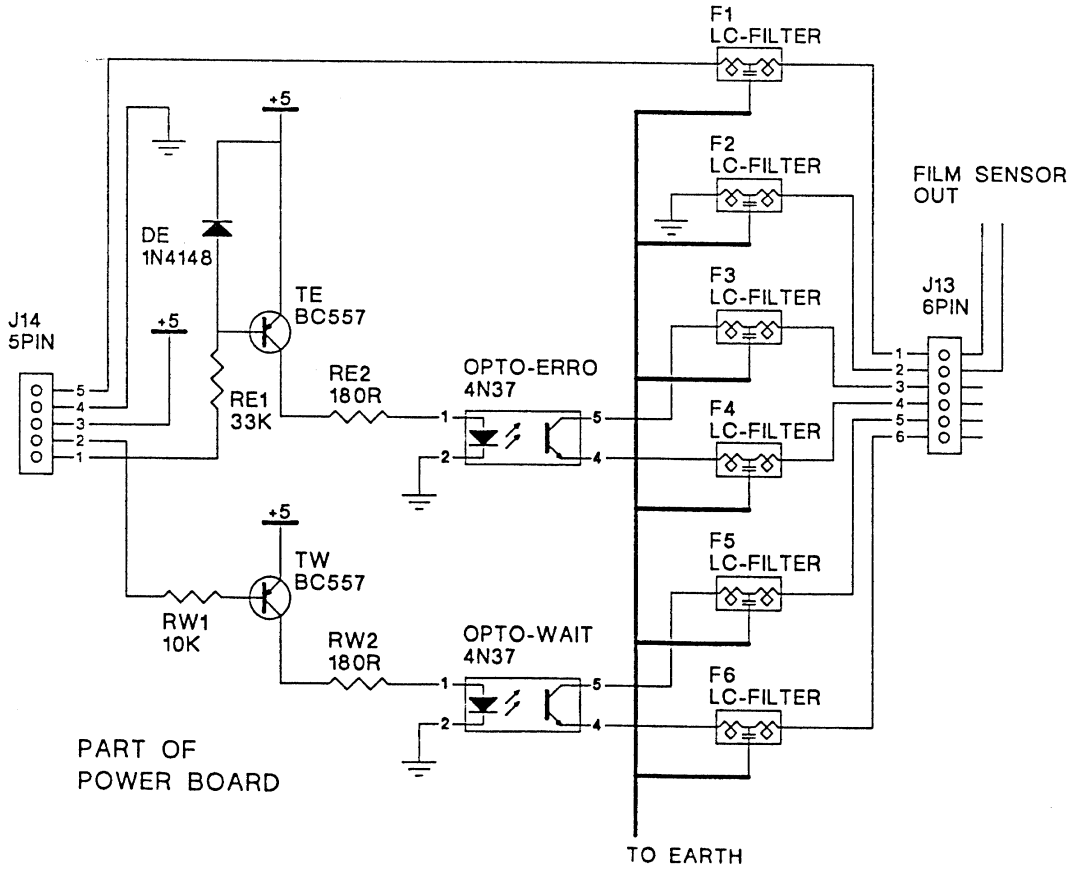
Error signal is indicate a critical fault 'in the Processor, it means a film Jam. If a film Jam arise, it is necessary to remove all film in the Processor before a new film can be developed.

The film Jam will arise if a detected film from the inlet sensors not in time has been detected of the exit switch, or gets stuck in the exit.

The Danagraf electronic in On-Line mode can be switch ON or OFF (normal or invert) for the Imagesetter signal, the normal communication from the Imagesetter is a wait and wait return and Error and Error return.

Danagraf can supply the cable to the Buffer / Conveyor or the Imagesetter as a normal D - Sub 9 Pol Male or D - Sub 15 Female on request, see enclose drawing.


SCREEN
BROWN
WHITE
J13
D-SUB 9 POL
Male
WHITE 1
6
BROWN 2
7
3
8
4
SCREEN 9
5
Wire. l = 3.0 m
SCREEN
BROWN
GREEN
WHITE
YELLOW
J13
D-SUB 15 POL
Female
8
BROWN 15
7
GREEN 14
6
13
5
12
4
11
3
10
WHITE 2
SCREEN 9
YELLOW 1
Wire. l = 2.5 m


F1
LC-FILTER
F2
LC-FILTER
FILM SENSOR
OUT
F3
LC-FILTER
J13
6PIN
F4
LC-FILTER
F5
LC-FILTER
F6
LC-FILTER
+5
DE
1N4148
TE
BC557
J14
5PIN
RE2
180R
RE1
33K
OPTO-ERRO
4N37
TW
BC557
RW1
10K
RW2
180R
OPTO-WAIT
4N37
PART OF
POWER BOARD
TO EARTH